IN THE UNITED STATES DISTRICT COURT

FOR THE NORTHERN DISTRICT OF CALIFORNIA

SANDISK CORPORATION,

Plaintiff,

v

MEMOREX PRODUCTS, INC, ET AL,

Defendants.

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No C-01-4063 VRW

ORDER

This action involves a patent dispute between SanDisk, the patent holder, and three companies (Ritek, Pretec and Memorex) that allegedly infringe SanDisk's patent. This court previously construed two claim terms ("array" and "partitioning"), and granted summary judgment in favor of defendants based on its construction of "partitioning." See Doc ##318, 349 and 351. SanDisk appealed to the Court of Appeals for the Federal Circuit. See SanDisk Corp v Memorex Prods, Inc, 415 F3d 1278 (Fed Cir 2005). The Federal Circuit vacated the grant of summary judgment, finding this court's

construction of "partitioning" erroneous. Id. The action was remanded for reconsideration and further claim construction. Id.

SanDisk and defendants Ritek, Pretec and Memorex filed a second joint claim construction statement on November 14, 2005. Doc #371. Subsequently, SanDisk, Ritek and Pretec filed separate claim construction briefs and replies. See Doc ##373, 387, 390, 395 and 396. Defendant Memorex joined in Pretec's claim construction statement. Doc #392. Additionally, SanDisk, arguing that defendants had violated the local patent rules, filed a motion to strike defendants' addition of new claim terms and new claim constructions. Doc #393. Defendants filed two separate oppositions. Doc ##398, 400.

At the claim construction hearing, counsel for SanDisk and Ritek limited their arguments to three critical terms ("array," "partitioning" and "sector"). For each of these three terms, the court adopts a construction that is consistent with the claim language, the intrinsic evidence and the Federal Circuit's guidance.

I

SanDisk designs and manufactures CompactFlash memory cards. CompactFlash cards are memory storage units used in many electronic devices, including personal digital assistants, digital cameras and MP3 players. SanDisk owns United States Patent No 5,602,987 ('987 patent). The '987 patent covers a method of using electrically erasable programmable read only memories ("EEprom"). '987 patent at 1. EEprom memory is different from conventional

hard drive memory because EEprom memory is solid state, which means it does not have any moving mechanical parts. EEprom memory is similar to conventional hard drive memory in that it is non-volatile, which means that its memory can be maintained without a continuous power source. Some of the advances over the prior art described in this patent include the ability to select sectors of memory individually and in groups, erase such a group of sectors simultaneously, perform read/write functions on sectors simultaneously with erase functions on other sectors and map defective memory cells at the sector level. Id at 1:60-2:63.

Claims 1 and 10 are two of the '987 patent's five independent claims. These two claims and some of their respective dependent claims contain the only terms that are disputed. See Doc ##373, 390, 395. Claims 1 and 10 describe a method of operating a computer system that includes a processor and a memory system. The memory system contains a memory controller and an EEprom array. '987 patent at Fig 1a.

The EEprom array is an array of non-volatile floating gate memory cells. The EEprom array is subdivided into sectors, and some of the sectors include at least a user data portion and an overhead portion. Id at 8:40-51; SanDisk Corp v Memorex Prods, Inc, 415 F3d 1278. The user data portion contains the information the user has designated to be stored. User data includes, for example, music files, digital images and text documents. The overhead portion contains information used to regulate the memory system. Overhead data may include, for example, identifying information about the sector and information used to detect and manage defects. The relative proportion between the user data

portion and the overhead portion can be changed over time. '987 patent at 8:59-67. Additionally, the user data and overhead portions do not need to be grouped together physically. Id.

When erasing data from the array, the controller relays command and address information to the EEprom array. The commands are "gated by the address decode," so that the command "is effective only on the sector that is being addressed." Id at 5:46-55. This gating function allows the sectors to be erased simultaneously. It also results in less "over-erasing," because individual sectors can be examined during the process of erasing to verify that the command given to that sector has been executed. For example, if an erase command is given to a large number of sectors, some sectors will finish erasing earlier than others. These sections can be de-selected for any subsequent erase commands initiated to complete the original erase command.

When reading or writing to the memory sectors, the controller interacts with the information contained in the memory sector. The controller shifts out the address and read or write command information to the EEprom array, which sends the command to the appropriate memory sector and returns data from the memory sector through a variety of components. The controller then relays the data to the processor.

The use of overhead data allows the memory system to identify and correct for defects on a more efficient and dynamic basis. '987 patent at 7:31-8:39. Memory defects may be either hard or soft. Hard defects are physical defects in the memory medium. Soft defects are temporary defects in a particular read, write or erase command. Because EEprom memory degrades more

quickly than traditional disk drives, compensating for hard defects in an efficient manner is more important. To compensate for hard defects, the patent method includes defect-related information in the overhead portion of the memory sectors. This information allows the memory system to manage defects at the memory cell level, rather than merely at the sector level. Such defect management can occur on a dynamic basis. Against this background, the court must construe the terms of the patent.

II

The construction of patent claims is a question of law to be determined by the court. Markman v Westview Instruments, Inc, 517 US 370 (1996). The goal of claim construction is "to interpret what the patentee meant by a particular term or phrase in a claim." Renishaw PLC v Marposs SpA, 158 F3d 1243, 1249 (Fed Cir 1998). In doing so, the court looks first to the claim itself:

> The claims of the patent provide the concise formal definition of the invention. They are the numbered paragraphs which "particularly [point] out and distinctly [claim] the subject matter which the applicant regards as his invention." 35 USC § 112. It is to these wordings that one must look to determine whether there has been infringement. Courts can neither broaden nor narrow the claims to give the patentee something different than what he has set forth. No matter how great the temptations of fairness or policy making, courts do not rework claims. They only interpret them.

EI Du Pont de Nemours & Co v Phillips Petroleum Co, 849 F2d 1430, 1433 (Fed Cir 1988).

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"The claims define the scope of the right to exclude; the claim construction inquiry, therefore, begins and ends in all cases with the actual words of the claim." Renishaw, 158 F3d at 1248. "The words used in the claim are viewed through the viewing glass of a person skilled in the art." Brookhill-Wilk 1, LLC v Intuitive Surgical, Inc, 326 F3d 1215, 1220 (Fed Cir 2003) (citing Tegal Corp v Tokyo Electron Am, Inc, 257 F3d 1331, 1342 (Fed Cir 2001)). "Absent a special and particular definition created by the patent applicant, terms in a claim are to be given their ordinary and accustomed meaning." York Prods, Inc v Central Tractor Farm & Family Ctr, 99 F3d 1568, 1572 (Fed Cir 1996). The court may, if necessary, consult a variety of sources to determine the ordinary and customary meaning of a claim term, including "the words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art." Innova/Pure Water, Inc v Safari Water, 381 F3d 1111, 1116 (Fed Cir 2004).

The court begins its construction of claim terms by consulting intrinsic evidence of the meaning of disputed claim terms, which includes the claims, the specification and the prosecution history (if in evidence). Lacks Industries, Inc v McKechnie Vehicle Components USA, Inc, 322 F3d 1335, 1341 (Fed Cir 2003) (citation omitted). "If upon examination of this intrinsic evidence the meaning of the claim language is sufficiently clear, resort to 'extrinsic' evidence * * * should not be necessary." Digital Biometrics, Inc, v Identix, Inc, 149 F3d 1335, 1344 (Fed Cir 1998). "[I]f after consideration of the intrinsic evidence,

there remains doubt as to the exact meaning of the claim terms, consideration of extrinsic evidence may be necessary to determine the proper construction." Id. Although extrinsic evidence such as expert and inventor testimonies, dictionaries and learned treatises can shed useful light on the relevant art, extrinsic evidence is "less significant than the intrinsic record in determining the legally operative meaning of claim language." Phillips v AWH Corp, 415 F3d 1303, 1317 (Fed Cir 2005) (quoting C R Bard, Inc v United States Surgical Corp, 388 F3d 858, 862 (Fed Cir 2004)) (internal quotation marks omitted).

"[A] court may constrict the ordinary meaning of a claim term in at least one of four ways[:]" (1) "if the patentee acted as his own lexicographer and clearly set forth a definition of the disputed claim in either the specification or prosecution history;" (2) "if the intrinsic evidence shows that the patentee distinguished [the] term from prior art on the basis of a particular embodiment, expressly disclaimed subject matter, or described a particular embodiment as important to the invention;" (3) "if the term chosen by the patentee so deprives the claim of clarity as to require resort to the other intrinsic evidence for a definite meaning;" or (4) "if the patentee phrased the claim in step- or means-plus-function format," then "a claim term will cover nothing more than the corresponding structure or step disclosed in the specification, as well as equivalents thereto * * *." CCS Fitness, Inc v Brunswick Corp, 288 F3d 1359, 1366–67 (Fed Cir 2002) (internal citations and quotation marks omitted).

Limitations from the specification, such as from a preferred embodiment, cannot be read into the claims unless

expressly intended by the patentee. Teleflex, Inc v Ficosa North Am Corp, 299 F3d 1313, 1326 (Fed Cir 2002) ("The claims must be read in view of the specification, but limitations from the specification are not to be read into the claims.") And "a construction that excludes a preferred embodiment 'is rarely, if ever, correct.'" C R Bard, 388 F3d at 865 (citing Vitronics Corp v Conceptronic, Inc, 90 F3d 1576, 1583 (Fed Cir 1996)).

With these legal principles in mind, the court now construes the disputed claim language in the patents.

III

A

"[A]rray of non-volatile floating gate memory cells" (claims 1 & 10)

The court previously interpreted the term "array of non-volatile floating gate memory cells" as meaning:

> a group of memory cells on one or more memory chips. Multiple chips in the same array are connected through objects such as a common interface and/or common logic and resistor circuits. An array may contain components that are not memory cells, such as an interface.

Doc #318 at 12.

On appeal, the Federal Circuit did not address the "array" interpretation. SanDisk Corp v Memorex Prods, Inc, 415 F3d at 1292. Despite the Federal Circuit's pass on this term, SanDisk argues that the interpretation should be: "a memory portion of a semiconductor chip that contains non-volatile floating gate memory cells organized into rows and columns (i.e., a non-volatile

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floating gate memory chip)." SanDisk Br (Doc #373) at 6 (emphasis added).

SanDisk repeats the argument that an "array" is limited to a single chip. Id at 6-9; SanDisk Reply Br (Doc #396) at 3-6. This argument was considered and rejected in the initial claim construction order. Doc #318 at 12-16. SanDisk presents no reason why the court should revisit that decision here. Accordingly, the court declines to adopt SanDisk's construction.

Ritek contends that the Federal Circuit's analysis of the "partitioning" construction provided "additional guidance regarding the meaning of 'array.'" Ritek Br (Doc #390) at 14-15. Ritek proposes the following claim construction to "conform" with the Federal Circuit opinion:

> A group of memory cells on one or more memory chips *that are required to perform the steps of the claimed method* and are connected through a common interface and/or common logic and resistor circuits. It may contain components that are not memory cells, such as an interface. *There may be other memory cells in the memory system that are not part of the array which performs the steps of the claimed method.*

Id at 15 (Ritek's proposed additions to this court's original claim construction order in italics). For the reasons that follow, the court declines to modify the original construction of "array."

The Federal Circuit explicitly stated: "The judgment does not depend on the choice between these disputed meanings of 'array.' * * * [W]e find it unnecessary at this point to decide this dispute." SanDisk Corp v Memorex Prods, Inc, 415 F3d at 1292. This suggests that the Federal Circuit did not intend to provide any "additional guidance" on the term. More importantly, the Federal Circuit explicitly acknowledged it was not reviewing

"array." Id. The court finds that the Federal Circuit did not intend to alter the construction of "array" in its analysis of "partitioning."

Moreover, Ritek concedes that the court's original construction of "array" is correct. Ritek conceded at the claim construction hearing that the additional language it proposes merely makes the court's previous construction "extra right" in light of the guidance provided by the Federal Circuit with respect to the "partitioning" construction. A construction need not be "extra right" to avoid being wrong. Since the court will address the Federal Circuit's guidance in the "partitioning" construction, the court declines to adopt Ritek's proposed additions.

Accordingly, the court's original construction of the term "array" stands.

Because the court declines to adopt Ritek's proposed modifications to the construction, SanDisk's motion to strike Ritek's "new" construction of "array" is moot and DENIED. See Doc ##393, 405-2.

B

"[P]artitioning the memory cells within the individual sectors into at least a user data portion and an overhead portion" (claims 1 & 10)

The court previously interpreted the above term as meaning:

> Construction: Each non-volatile memory sector contained within an array of non-volatile floating gate memory cells must include at least one user data portion and one

> overhead portion. Memory sectors are not limited to only one user data portion and one overhead portion.

Claim constr order (Doc #318) at 16 (emphasis added).

The Federal Circuit held that this construction was erroneous. SanDisk Corp v Memorex Prods, Inc, 415 F3d 1292. Based on the plain language of the claim term, a strong presumption against excluding preferred embodiments of the invention and rejecting defendants' prosecution history estoppel argument, the Federal Circuit held that there may be memory sectors within a device that are not partitioned into at least one user portion and one data portion. Id at 1283-1290. The parties now all acknowledge "each" sector need not be partitioned into user data and overhead data.

But the dispute has shifted focus. SanDisk proposes: "The step of dividing (logically or physically) each individual sector used by the computer system in the practice of method claim 1 into at least one user data portion and at least one overhead portion." JCC (Doc #371), Ex A at 11 (emphasis added). Quite similarly, Ritek proposes: "The memory cells within the individual sectors required to perform the steps of the claimed method are logically or physically divided (i.e., partitioned) into at least a user data portion and an overhead portion. Memory sectors are not limited to only one user data portion and one overhead portion." Id (emphasis added). Both SanDisk and Ritek agree that their constructions are largely the same. SanDisk Br (Doc #373) at 10; Ritek Br (Doc #390) at 16; SanDisk Reply Br (Doc #396) at 6.

The only substantive differences are the terms "used by" and "required to perform." To the extent the parties' proposed

constructions differ, Ritek argues that, while the "partitioning * * * into user and overhead data" step need not be performed on every sector in the memory system, the "partitioning" step must be performed on every sector in the memory array. According to Ritek, the significance of Ritek's proposed addition, "required to perform the steps of," is that it requires each sector within an "array" to be partitioned. Ritek argues that this is merely what the Federal Circuit held in rejecting the court's first construction of "partitioning."

The court is not persuaded that the Federal Circuit stated as much. The Federal Circuit rejected the construction that "every Flash EEprom memory cell within an actual device [must] be grouped into a sector that is partitioned into user and overhead data portions." SanDisk Corp v Memorex Prods, Inc, 415 F3d at 1284. Ritek's additions do not necessarily follow from this rejection. The Federal Circuit did not address whether every sector within an "array" must be partitioned. Nor did the Federal Circuit address how an "array" is delimited from other arrays or other memory cells – nor did this court. By the plain language of the claims, the Federal Circuit stated that all that is required of the claimed memory system is "some memory cells, grouped into sectors, partitioned into user and overhead data portions," and "additional, unclaimed use" of memory cells is consistent with practicing the claimed invention so long as all of the limitations are met. Id; '987 patent.

There is a gap between what the Federal Circuit held (all that is required is "some memory cells, grouped into sectors, partitioned into user and overhead data portions") and what Ritek

argues that the Federal Circuit held ("the Federal Circuit held that the 'array' practices the invention but that the 'memory system' may contain other, unclaimed, memory cells.") SanDisk Corp v Memorex Prods, Inc, 415 F3d at 1284; Doc #400 at 6. The court does not need to visit this issue to arrive at a proper claim construction that is consistent with the language of the plain language and the intrinsic evidence. Accordingly, the court declines to adopt Ritek's proposed construction of "partitioning." Similarly, the court declines to adopt SanDisk's proposed construction.

Instead, the court gives the following hybrid construction to conform with the Federal Circuit's rejection of the initial claim construction:

> The non-volatile memory sectors contained within an array of non-volatile floating gate memory cells include at least one user data portion and one overhead portion. Memory sectors are not limited to only one user data portion and one overhead portion.

The changes in the court's construction being: (1) "Each" is now "The"; and (2) "must" is omitted. See claim constr order (Doc #318) at 16. This construction is consistent with the Federal Circuit, the plain language and the intrinsic evidence.

C

"[S]ectors" (claims 1 & 10)

As a starting point, both SanDisk and Ritek agree that a "sector" is the "basic unit of erase." The Federal Circuit endorsed this interpretation. SanDisk Corp v Memorex Prods, Inc, 415 F3d at 1281. Judge Breyer also adopted this construction in

the Lexar litigation. In full, Judge Breyer's construction was:

> A "non-volatile memory sector" is the basic unit of erase for the non-volatile memory. It is not limited to 512 bytes of user data and 64 bytes of overhead data.

SanDisk Corp v Lexar Media, Inc, 1999 WL 129512, 3 (ND Cal 1999). The parties agree with this construction as far as it goes, but this does not end their dispute.

The dispute is whether the construction of "sector" should include some reference to size or number of memory cells. JCC (Doc #371), Ex A at 6. SanDisk proposes that the court adopt Judge Breyer's construction and add that a sector is "further understood to refer to a substantial number of memory cells." Id. Ritek contends that SanDisk is playing "fast and loose with the courts" since they previously argued that "sector" was not limited to the size recited above. Ritek Br (Doc #148) at 15.

SanDisk's position in Lexar (that size was not limited to a specified value) was essentially arguing that the example provided in the specification should not be read into the claim. See Lexar, 1999 WL 129512, 3; Berta Reply Decl (Doc #397-2), Ex A at 8-12. This is consistent with arguing that size must be a certain minimum number of cells, i e, more than an insubstantial number. Ritek's judicial estoppel argument lacks merit.

Ritek also argues that inserting SanDisk's proposed language is incorrect because the specification refers to "Flash EEprom" and traditional (non-flash) "EEprom." Ritek argues that since the invention did not exclude EEprom, and in fact refers to EEprom, that the invention relates to both flash EEprom and traditional EEprom. This distinction is significant, Ritek argues, \\

because traditional EEprom memories would only allow sectors to contain small units of memory.

The court need not visit the issue whether the invention relates to flash EEprom only or both flash and traditional EEprom because it is unnecessary to insert SanDisk's proposed addition ("further understood to refer to a substantial number of memory cells") in the court's construction. Nothing in the construction which the parties agree to ("the basic unit of erase") precludes the size of the "basic unit of erase" from being a "substantial," according to one having ordinary skill in the art, "basic unit of erase." The court reaches this conclusion without deciding whether Ritek's argument, that the invention is not limited to flash EEprom memories, has merit. The court also reaches this conclusion without deciding whether SanDisk's arguments that one having ordinary skill in the art would understand the invention to relate only to flash EEprom memories.

Since Ritek does not argue, as Lexar did, that a sector was limited to a described embodiment in the specification (512 bytes of user data and 64 bytes of overhead data), it is unnecessary to include that clarification here.

Accordingly, the court adopts the following construction for "sector" means:

The basic unit of erase.

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IV

In sum, the court has construed or clarified the construction of the three key disputed terms of the '987 patent according to the patent's plain language, the intrinsic record and the Federal Circuit's guidance. Notwithstanding any further orders the court may make regarding claim construction, this order shall be deemed to be the "claim construction order" for scheduling purposes.

Because the court declines to construe the terms addressed in SanDisk's motion to strike, Doc #393, the motion is moot and DENIED.

The court DIRECTS SanDisk and defendants Ritek, Memorex and Pretec to attend a CMC at 9:00 am on April 3, 2007, or if this date is not convenient, the court DIRECTS the parties to confer to determine an alternative date and contact the deputy clerk to set up a conference at a date convenient to their schedules.

SO ORDERED

VAUGHN R WALKER

United States District Chief Judge